



Volunteer Lake Assessment Program Individual Lake Reports

GOVERNORS LAKE, RAYMOND, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	680	Max. Depth (m):	3	Flushing Rate (yr ⁻¹)	4
Surface Area (Ac.):	52	Mean Depth (m):	1.3	P Retention Coef:	0.64
Shore Length (m):	2,400	Volume (m ³):	328,500	Elevation (ft):	267

TROPHIC CLASSIFICATION

Year	Trophic class
1989	MESOTROPHIC
2004	MESOTROPHIC

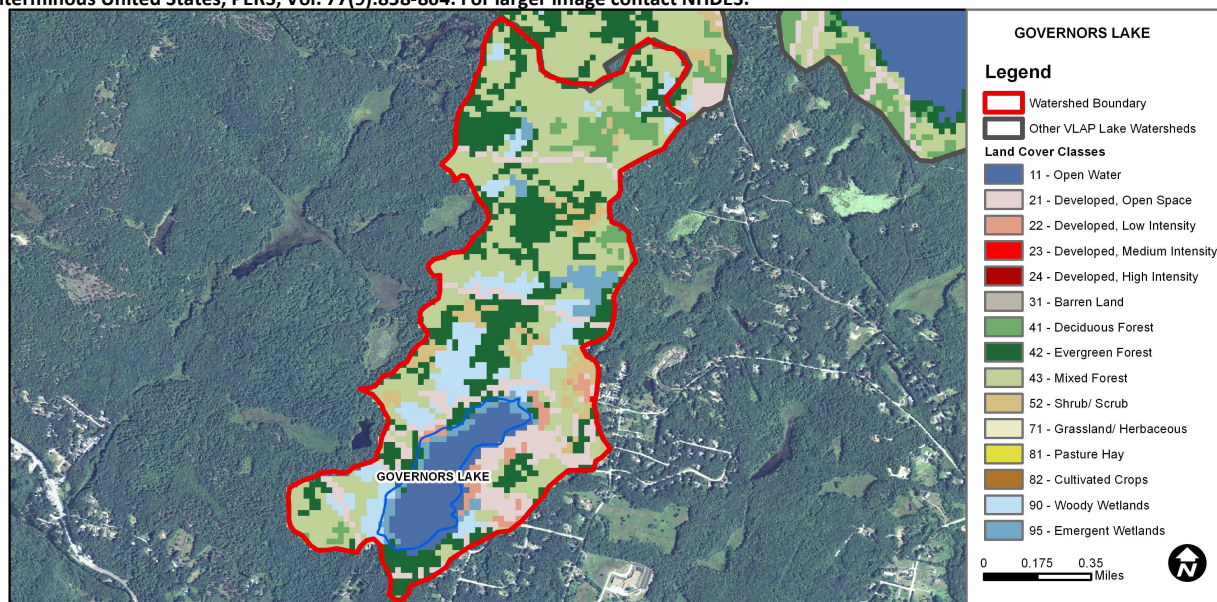
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	8.02	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	9.65	Deciduous Forest	4.38	Pasture Hay	0
Developed-Low Intensity	2.06	Evergreen Forest	22.97	Cultivated Crops	0
Developed-Medium Intensity	0.03	Mixed Forest	33.54	Woody Wetlands	10.96
Developed-High Intensity	0	Shrub-Scrub	4.19	Emergent Wetlands	4.12



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

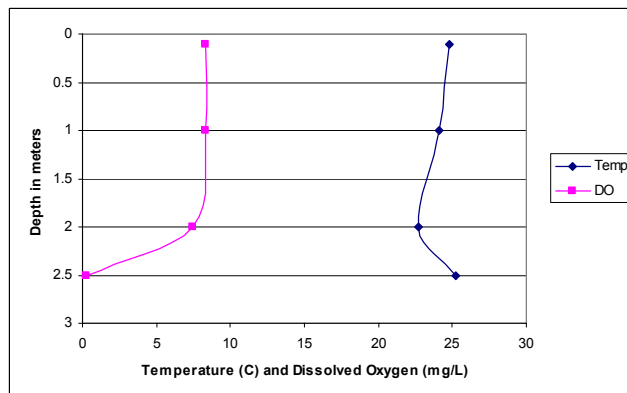
GOVERNORS LAKE, RAYMOND, NH

2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- 🔥 **CHLOROPHYLL-A:** Chlorophyll levels were elevated in July and August and greater than the NH lake median.
- 🔥 **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were slightly elevated above the NH lake medians.
- 🔥 **E. COLI:** E. coli levels were well below state standards for public beaches and surface waters.
- 🔥 **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus levels were slightly elevated and greater than the NH lake median. Well phosphorus levels were elevated.
- 🔥 **TRANSPARENCY:** Transparency levels were the highest measured since 2001. We hope to see this continue.
- 🔥 **TURBIDITY:** Epilimnetic turbidity was slightly elevated likely due to the increased algal growth. Inlet and Outlet turbidity were also slightly elevated likely due to low flow conditions.
- 🔥 **pH:** pH levels were in a good range, however historically have been at critical levels.
- 🔥 **RECOMMENDED ACTIONS:** Overall water quality is better in years experiencing less stormwater runoff. Educate watershed residents on ways to reduce stormwater runoff from their properties. DES' "NH Homeowner's Guide to Stormwater Management" is a great resource. Discuss the possibility of low salt zones around the lake with the Town road agent to help reduce chloride and conductivity levels.

Dissolved Oxygen & Temperature Profile



Station Name	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.	Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m	ntu	
							NVS		
Deep Epilimnion	6.88	7.14	24	128.5		20	2.23	1.71	6.89
Inlet			24	128.8	10	19		1.44	6.85
Main Beach					11				
Outlet				128.6	10	19		1.38	6.92
Twin Beach					6				
Well				118.1	2	42		1.25	7.09
West Beach					9				

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	N/A	More data necessary to establish trend.
Transparency	N/A	More data necessary to establish trend.
Phosphorus (epilimnion)	N/A	More data necessary to establish trend.

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
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